FORM PTO-1390 (REV. 5-93)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTORNEY'S DOCKET NUMBER 10191/1389

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371

U.S. APPLICATION NO. (If known, see 37 CFR 1.5)
09/582686

INTERNATIONAL APPLICATION NO.	INTERNATIONAL FILING DATE	PRIORITY DATES CLAIMED
PCT/DE99/02158	(13.07.99) 13 July 1999	(30.10.98) 30 October 1998

TITLE OF INVENTION
METHOD AND DEVICE FOR TESTING THE INHIBIT FUNCTION OF A NETWORK COMPONENT TRANSMISSION INHIBITING DEVICE

APPLICANT(S) FOR DO/EO/US
PEVELING, Wolfgang and SCHUMACHER, Simone

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☐ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
   a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
   b. ☒ has been transmitted by the International Bureau.
   c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US)
6. ☒ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
   a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
   b. ☐ have been transmitted by the International Bureau.
   c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
   d. ☒ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). (Unsigned).
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern other document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A **FIRST** preliminary amendment.
    ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information: Copies of International Search Report and Form PCT/RO/101.

EXPRESS NO. EL039797957US

532 Rec'd PCT/PTO 29 JUN 2000

U.S. APPLICATION NO. if known, see 37 C.F.R. 1.5	INTERNATIONAL APPLICATION NO	ATTORNEY'S DOCKET NUMBER
09/582686	PCT/DE99/02158	10191/1389

17. ☒ The following fees are submitted:

	CALCULATIONS	PTO USE ONLY
Basic National Fee (37 CFR 1.492(a)(1)-(5)): Search Report has been prepared by the EPO or JPO $840.00		
International preliminary examination fee paid to USPTO (37 CFR 1.482) $670.00		
No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2)) $750.00		
Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO $970.00		
International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4) $96.00		
ENTER APPROPRIATE BASIC FEE AMOUNT =	$840	
Surcharge of $130.00 for furnishing the oath or declaration later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(e)).	$	

Claims	Number Filed	Number Extra	Rate		
Total Claims	11 - 20 =	0	X $18.00	$	
Independent Claims	2 - 3 =	0	X $78.00	$	
Multiple dependent claim(s) (if applicable)			+ $260.00	$	

TOTAL OF ABOVE CALCULATIONS =	$840	
Reduction by ½ for filing by small entity, if applicable. Verified Small Entity statement must also be filed. (Note 37 CFR 1.9, 1.27, 1.28).	$	
SUBTOTAL =	$840	
Processing fee of $130.00 for furnishing the English translation later the ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(f)). +	$	
TOTAL NATIONAL FEE =	$840	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). $40.00 per property +	$	
TOTAL FEES ENCLOSED =	$840	
	Amount to be: refunded	$
	charged	$

a. ☐ A check in the amount of $_____ to cover the above fees is enclosed.

b. ☒ Please charge my Deposit Account No. 11-0600 in the amount of **$840.00** to cover the above fees. A duplicate copy of this sheet is enclosed.

c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 11-0600. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

Kenyon & Kenyon
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By: D. Magnuth (Reg. No. 41,172)
Richard L. Mayer
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NAME

6/29/00
DATE

285068

[10191/1389]

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s)	:	Wolfgang PEVELING et al.
Serial No.	:	To Be Assigned
Filed	:	Herewith
For	:	METHOD AND DEVICE FOR TESTING THE INHIBIT FUNCTION OF A NETWORK COMPONENT TRANSMISSION INHIBITING DEVICE
Examiner	:	To Be Assigned
Art Unit	:	To Be Assigned

Assistant Commissioner
for Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT

SIR:

Kindly amend the above-identified application before examination, as set forth below.

IN THE TITLE:

Please replace the title with the following new title: --METHOD AND DEVICE FOR TESTING THE INHIBIT FUNCTION OF A NETWORK COMPONENT TRANSMISSION INHIBITING DEVICE--.

IN THE SPECIFICATION:

Please amend the specification as follows:

On page 1, delete line 1.

On page 1, before line 3, insert: --FIELD OF THE INVENTION--.

On page 1, before line 10, insert:

--BACKGROUND INFORMATION--.

On page 2, line 3, change "**[reference numeral]**" to --reference numeral--.

On page 2, line 4, change "**[designates]**" to --designates--.

On page 2, line 18, before "to" insert --are sent--.

On page 3, line 11, change "known" to --conventional--.

On page 3, line 16, delete "in known methods heretofore".

On page 4, line 1, change "usual" to --conventional--.

On page 4, delete line 5.

On page 4, before line 7, insert: --SUMMARY--.

On page 4, line 7, delete "having".

On page 4, line 8, change "the features of claim 1 as well as" to --and--.

On page 4, line 9, delete "according to claim 5", and change "known" to --conventional--.

On page 4, delete lines 30-31.

On page 4, line 33, change "a preferred" --an

example--.

On page 4, line 37, delete "the second".

On page 5, line 1, delete "node,", and change "it" to --the second node--.

On page 5, line 2, delete "itself".

On page 5, line 5, change "preferred" to --example--.

On page 5, line 8, delete "preferred".

On page 5, line 15, change "preferred" to --example--.

On page 5, line 17, delete "preferred".

On page 5, line 22, delete "in general,".

On page 5, line 27, change "preferred" to --example--.

On page 5, delete 31.

On page 5, before line 33, insert: --BRIEF DESCRIPTION OF THE DRAWINGS--.

On page 5, delete lines 33-35.

On page 6, line 1, change "as" to --according to an--.

On page 6, line 2, change "; and" to --.--.

On page 6, delete line 7.

On page 6, before line 9, insert: --DETAILED DESCRIPTION--.

On page 6, line 9, change "known" to --conventional--.

On page 8, line 1, change "can in principle" to --may--.

On page 8, line 11, delete "to" (first occurrence).

On page 8, line 12, change "In principle, any" to --Any--.

On page 9, delete line 1, and insert: --What Is Claimed Is:--.

IN THE ABSTRACT:

Please amend the abstract as follows:

Line 3, change "The present invention provides a" to --A--, and after "device" insert --are described--.

Line 6, delete "(TX)" and "(10)".

Line 8, delete "(H)", change "node (K1), characterized by the" to --node. The--

Line 9, before "steps" insert --method includes the--, after "steps" insert --of--, and delete "(TX)".

Line 11, delete "(10)".

Line 13, delete "(10)" and "(TX)".

Line 16, delete "(10)".

Delete line 18.

IN THE CLAIMS:

Please cancel claims 1-11, without prejudice.

Please add the following new claims:

12. (New) A method for testing an inhibit function of a network component transmission-inhibiting device used for inhibiting a transmission line from the network component to a network by performing the inhibit function which causes a logical signal to be applied to a first node, the method comprising:

tapping a potential of the transmission line;

feeding the tapped potential back to the network component;

activating the inhibit function;

transmitting a predefined test signal message from the network component to the network via the transmission line while the inhibit function is activated; and

testing the inhibit function by analyzing the tapped potential fed back.

13. (New) The method according to claim 12, further comprising:

tapping the potential of the transmission line at a second node between the first node and a transmission port of the network component, the transmission port being connected to the transmission line.

14. (New) The method according to claim 12, wherein the network component is a microcontroller having an interrupt function which can be controlled via an interrupt port, the tapped potential being fed back to the interrupt port, and the inhibit

function being tested by analyzing whether or not the interrupt function is triggered.

15. (New) The method according to claim 12, wherein the network component is a microcontroller having a scannable input port, the tapped potential being fed back to the scannable input port, the inhibit function being tested by analyzing a signal at the scanned input port.

16. (New) The method according to claim 12, further comprising:

closing a switch which is located between the first node and a supply potential to apply the logic signal.

17. (New) A device for testing an inhibit function of a network component transmission-inhibiting device used for inhibiting a transmission line from the network component to a network by performing the inhibit function which causes a logical signal to be applied to a first node, the device comprising:

a test signal line to tap a potential of the transmission line and to feed the tapped potential back to the network component;

a test-signal message transmitting device to transmit a predefined test signal message from the network component to the network via the transmission line in response to an activated inhibit function; and

a testing device to test the inhibit function by analyzing the fed back tapped potential in the network component during transmission of the predefined test signal message.

18. (New) The device according to claim 17, further comprising:

a resistance provided between the first node and a transmission port connected to the transmission line.

19. (New) The device according to claim 17, wherein the transmission inhibiting device includes:

a transmission inhibit signal generating device to generate an inhibit signal during activation of the inhibit function;

a switching device interposed between a supply potential and the first node which is closed in response to the inhibit signal.

20. (New) The device according to claim 19, wherein the test signal line for tapping the potential of the transmission line is connected to a second node between the first node and a transmission port of the network component, the transmission port being connected to the transmission line.

21. (New) The device according to claim 19, wherein the test signal line for tapping the transmission of the transmission line is connected to a second node in the network component upstream of the transmission port of the network component.

22. (New) The device according to claim 19. wherein the network component includes a Controller Area Network (CAN) controller which is connected via the transmission line to a CAN transmission/receiving device which, in turn, is connected to a CAN bus.

Remarks

This Preliminary Amendment cancels, without prejudice, claims 1-11 in the underlying PCT Application No. PCT/DE98/03452 and adds new claims 12-22. The new claims, inter alia, conform the claims to U.S. Patent and Trademark Office rules and do not add new matter to the application.

The above amendments to the title, the specification and the abstract conform the title, the specification and the abstract to U.S. Patent and Trademark Office rules, and do not introduce new matter into the application.

The underlying PCT application PCT/DE99/02158 includes an International Search Report dated February 17, 2000. An English translation of the Search Report is provided herewith.

It is respectfully submitted that the subject matter of the present application is new, non-obvious, and useful. Prompt consideration and allowance of the application are respectfully requested.

Respectfully submitted,

By. Dr Magnus (Reg. No. 44,172)

Dated: 6/29/00

By: Richard L. Mayer
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[10191/1389]

METHOD AND DEVICE FOR TESTING THE INHIBIT FUNCTION OF A NETWORK COMPONENT TRANSMISSION INHIBITING DEVICE

Related Art

The present invention relates to a method and a device for testing the inhibit function of a network component transmission inhibiting device that allows a transmission line from the network component to the network to be inhibited by an inhibit function which causes a logical signal to be applied to a first node.

Although applicable to arbitrary networks, the present invention and its underlying problem are explained with regard to a network component transmission inhibiting device of a network that is located on board a motor vehicle, namely the CAN transmission inhibit function (CANSTOP) of the real-time capable serial bus system "Controller Area Network" (CAN).

In modern motor vehicles, provision is made for network components (control units, sensor devices, actuator devices) having unique addresses and linked over a bus such as the CAN bus, the network components being able to exchange messages having a clear assignment between the same.

An example of such a network component is a proximity control device which is used in a motor vehicle for automatic proximity control.

The underlying problem of the present invention lies generally in that, in certain cases, it is required to decouple such a network component from the network or to inhibit its transmission function to the network by a safety device in the form of network component transmission inhibiting device.

Fig. 2 shows such a known transmission inhibiting device for a

CAN network component.

In Fig. 2, **[reference numeral]** 100 designates a vehicle CAN bus, 10 **[designates]** a controller of a proximity control device, 20 a transmission inhibit signal generating device, 15 a CAN control section of controller 10 (usually a microcontroller), 151 a TX transmission port of CAN control section 15, 152 an RX receive port of CAN control section 15, 30 a CAN transmission/receiving device, TX a transmission line, RX a receive line, CANH a CAN high-level line, CANL a CAN low-level line, S1 a switch, SS an inhibit signal line, K1 a first node, R a resistance, and V+ a supply potential.

During normal operation, controller 10, via its CAN control section 15, sends signal messages over unidirectional transmission line TX to CAN transmission/receiving device 30 from where, via CAN high-level line CANH and CAN low-level line CANL, the signal messages to the remaining network components over vehicle CAN bus 100. Likewise, the controller, via unidirectional receive line RX, receives signal messages which are addressed to it from CAN transmission/receiving device 30.

With the assistance of transmission inhibit signal generating device 20, which, in the present example, is a digital signal processor (DSP) it is possible for faults to be detected in controller 10, either directly via a link (not shown) or indirectly via other components (not shown either).

In response thereto, transmission inhibit signal generating device 20 outputs an inhibit signal to switch S1 via inhibit signal line SS, the inhibit signal closing the switch and, consequently, connecting first node K1 on transmission line TX to supply potential V+. Because of this, transmission line TX is constantly at a logical "1" or "H" level, resulting in that no data, i.e., level variations H->L or L->H, can be transmitted. Consequently, the link of controller 10 to

vehicle CAN bus 100 is inhibited and, therefore, unwanted or unpredictable reactions of other network components on vehicle CAN bus 100, for example, in the form of control units, can be prevented.

In this context, resistance R, which is located between first node K1 and transmission port 151 connected to transmission line TX protects TX transmission port 151 from supply potential V+.

In the above known design approach, it has turned out to be a disadvantage that this transmission inhibiting device, which is composed of transmission inhibit signal generating device 20, inhibit signal line SS, switch S1 and supply potential V+, cannot be tested by controller 10 without an additional testing device in known methods heretofore since the reaction in appertaining CAN control section 15, which is usually an integral component of the controller, does not furnish any clear conclusions in the OK case of the transmission inhibiting device.

In particular, the OK case (transmission inhibiting device works) cannot be distinguished from the case in which the CAN bus connection to controller 10 is interrupted, i.e., for example, in which transmission line TX and/or receive line RX and/or CAN high-level line CANH and/or CAN low-level line CANL is/are interrupted or transmission/receiving device 30 has a defect.

Since in both cases, CAN control section 15 generates the same fault flags or markers in its internal evaluable registers if, in response to an attempt to transmit a signal message over transmission line TX, it does not receive an acknowledge response via receive line RX within a certain time. In other words, in all these cases, it detects the presence of a decoupling from vehicle CAN bus 100.

Consequently, usual methods using an additional device are disadvantageous in so far as they require a large expense and operating effort.

Advantages of the Invention

The testing method according to the present invention having the features of claim 1 as well as the corresponding testing device according to claim 5 have the advantage over the known design approach that they provide a simple internal way of testing the inhibit function without requiring an external intervention in the respective network component itself.

No additional hardware is required since the method is very simple and needs very little computing time. In other words, a minimum software overhead is sufficient. Also, the method works without the cooperation with the remaining network components, i.e., without the bus connection itself.

The basic idea of the present invention is that a feedback loop is laid from the transmission line to the network component, the feedback loop, during activated inhibit function, making it possible to distinguish between a malfunction of the network component transmission inhibiting device and an interruption of the CAN bus connection to the controller. In the first case, in fact, a predetermined test signal message is fed back to the network component whereas in the second case, it is not.

Advantageous embodiments and improvements are found in the respective subclaims.

According to a preferred embodiment, the potential of the transmission line is tapped at a second node which is located between the first node and the transmission port of the network component, the transmission port being connected to the transmission line. This has the advantage that the second

node, the closer it is located to the transmission port, the more insensitive it is itself to a potential electrical interruption.

In another preferred embodiment, the network component is a controller, in particular, a microcontroller having an interrupt function which can be controlled via an interrupt port. In this preferred case, the tapped potential is fed back to the interrupt port, and the inhibit function is tested by analyzing whether or not an interrupt is triggered. Utilizing an interrupt means having no loss of computing time since the controller hardware responds to an edge change with an interrupt signal.

According to a further preferred embodiment, the network component is a controller, in particular a microcontroller, having a scannable input port. In this preferred case, the tapped potential is fed back to the scannable input port, and the inhibit function is tested by analyzing the signal at the scanned input port. Here, polling is used which means that the controller pin is permanently interrogated. During this time, in general, no other processor computing function can indeed be carried out but no interrupt-capable controller port is required either, which, in many applications, does actually not exist.

According to another preferred embodiment, the logical signal is applied to the first node by closing a switch which is located between the first node and a supply potential.

Drawings

An exemplary embodiment of the present invention is shown in the drawings and explained in greater detail in the following description.

Fig. 1 shows a testing device for a known transmission

inhibiting device for a CAN network component as exemplary embodiment of the present invention; and

Fig. 2 shows the known transmission inhibiting device for a CAN network component.

Description of the Exemplary Embodiments

Fig. 1 shows a testing device for a known transmission inhibiting device for a CAN network component as exemplary embodiment of the present invention, identical reference symbols as in Fig. 1 designating identical or functionally identical elements.

In Fig. 1, in addition to the reference symbols already introduced, CSM designates a test signal line, INT an interrupt port of controller 10, and K2 a second node.

In the exemplary embodiment, provision is made for a test signal line CSM for tapping the potential of transmission line TX at second node K2 which is located between first node K1 and transmission port 151 of network component 10 in the form of the controller, the transmission port being connected to transmission line TX. The test signal line carries the potential of transmission line TX tapped at node K2 to interrupt port INT.

In the illustrated exemplary embodiment, the testing method operates as follows.

During a test, transmission inhibit signal generating device 20 in the form of the digital signal processor activates the inhibit function in response to a prompt by controller 10.

If the transmission inhibiting device, which is composed of transmission inhibit signal generating device 20, inhibit signal line SS, switch S1 and supply potential V+, altogether

works, this activation causes logical signal H to be applied to first node K1 and, consequently, inhibits transmission line TX. However, if a component of the transmission inhibiting device is defective, no inhibition takes place.

To test this, controller 10 thereupon transmits a predetermined test signal message, for example, a simple signal level transition (H->L), to the network via transmission line TX during the inhibit function activated in response to a prompt by the controller. The test signal message is expediently configured in such a manner that it is plausible and, consequently, cannot disturb other network components, in particular control units in case the inhibit function does not work (NOK case).

Then, the inhibit function is tested by analyzing the tapped potential fed back to interrupt port INT during the transmission of the predetermined test signal message. If the transmission inhibiting device works correctly, no data reaches interrupt port INT of controller 10, i.e., no interrupt is triggered. If the transmission inhibiting device is defective, then an interrupt is triggered since the permanent application of logical signal H to first node K1 does not happen, and signal level transition (H->L) mentioned as an example can therefore occur.

The information obtained in this manner makes it possible to unequivocally recognize a properly working inhibit function.

Although the present invention is described above on the basis of a preferred exemplary embodiment, it is not limited thereto but can be modified in many ways.

In particular, it is possible for the testing device according to the present invention to be used not only for CAN modules on board of a motor vehicle but for any network having arbitrary network components.

Also, the potential tap at node K2 can in principle be located at a different point of transmission line TX; however, expedient is an arrangement which is located very closely behind TX transmission port 151 or upstream of transmission port 151 in the CAN control unit itself so that the probability of an interruption upstream of (i.e., in Fig. 1, to the left of) node K2, which cannot be detected by this method, is kept extremely low.

The tapped potential of transmission line TX needs not necessarily to be fed back to an interrupt-capable controller port. In principle, any controller port that can be interrogated or polled, preferably by software, for a level variation is suitable for this.

Patent Claims

1. A method for testing the inhibit function of a network component transmission-inhibiting device used for inhibiting a transmission line (TX) from the network component (10) to the network by performing an inhibit function which causes a logical signal (H) to be applied to a first node (K1),
characterized by the steps:

tapping the potential of the transmission line (TX) and feeding the tapped potential back to the network component (10);

activating the inhibit function;

transmitting a predefined test signal message from the network component (10) to the network via the transmission line (TX) during activated inhibit function; and

testing the inhibit function by analyzing the tapped potential fed back.

2. The method as recited in Claim 1,
characterized by the step of tapping the potential of the transmission line (TX) at a second node (K2) between the first node (K1) and the transmission port (151) of the network component (10), the transmission port being connected to the transmission line (TX).

3. The method as recited in Claim 1 or 2,
characterized in that the network component (10) is a controller, in particular a microcontroller having an interrupt function which can be controlled via an interrupt port (INT); in that the tapped potential is fed back to the interrupt port (INT); and in that the inhibit

function is tested by analyzing whether or not an interrupt is triggered.

4. The method as recited in Claim 1 or 2, characterized in that the network component (10) is a controller, in particular a microcontroller, having a scannable input port; in that the tapped potential is fed back to the scannable input port; and in that the inhibit function is tested by analyzing the signal at the scanned input port.

5. The method as recited in one of the preceding Claims, characterized in that the logical signal (H) is applied to the first node (K1) by closing a switch (S1) which is located between the first node (K1) and a supply potential (V+).

6. A device for carrying out the method as recited in at least one of the preceding claims, characterized by:

a test signal line (CSM) for tapping the potential of the transmission line (TX) and feeding the tapped potential back to the network component (10);

a test-signal message transmitting device for transmitting a predefined test signal message from the network component (10) to the network via the transmission line (TX) in response to an activated inhibit function; and

a testing device for testing the inhibit function by analyzing the fed back, tapped potential in the network component (10) during transmission of the predefined test signal message.

7. The device as recited in Claim 6,

characterized by

a resistance (R) which is provided between the first node (K1) and the transmission port (151) connected to the transmission line (TX).

8. The device as recited in Claim 6 or 7, characterized in that the transmission inhibiting device comprises:

a transmission inhibit signal generating device (20) for generating an inhibit signal during activation of the inhibit function; and

a switching device (S1) which is interposed between a supply potential (V+) and the first node (K1), and which can be closed in response to the inhibit signal.

9. The device as recited in Claim 6 through 8, characterized in that the test signal line (CSM) for tapping the potential of the transmission line (TX) is connected to a second node (K2) between the first node (K1) and the transmission port (151) of the network component (10), the transmission port being connected to the transmission line (TX).

10. The device as recited in Claim 6 through 8, characterized in that the test signal line (CSM) for tapping the potential of the transmission line (TX) is connected to a second node (K2) in the network component (10) upstream of the transmission port (151) of the network component (10).

11. The device as recited in Claim 6 through 10, characterized in that the network component (10) has a CAN controller (15) which is connected via the transmission line (TX) to a CAN transmission/receiving

device (30) which, in turn, is connected to a CAN bus (100).

Abstract

The present invention provides a method and a device for testing the inhibit function of a network component transmission inhibiting device that allows a transmission line (TX) from the network component (10) to the network to be inhibited by an inhibit function which causes a logical signal (H) to be applied to a first node (K1), characterized by the steps: tapping the potential of the transmission line (TX) and feeding the tapped potential back to the network component (10); activating the inhibit function; transmitting a predetermined test signal message from the network component (10) to the network via the transmission line (TX) during activated inhibit function; and testing the inhibit function by analyzing the fed back tapped potential in the network component (10).

(Fig. 1)

FIG 1

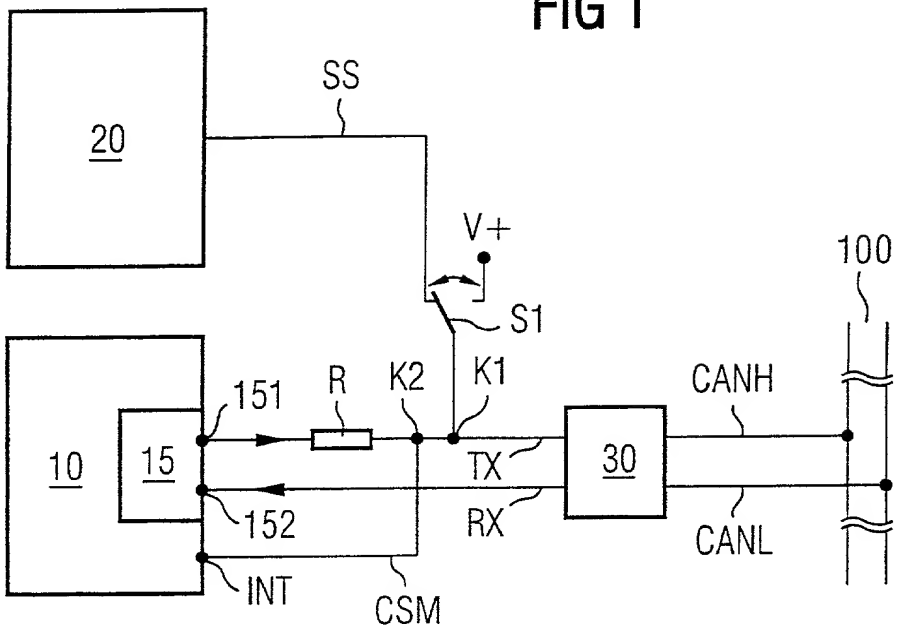
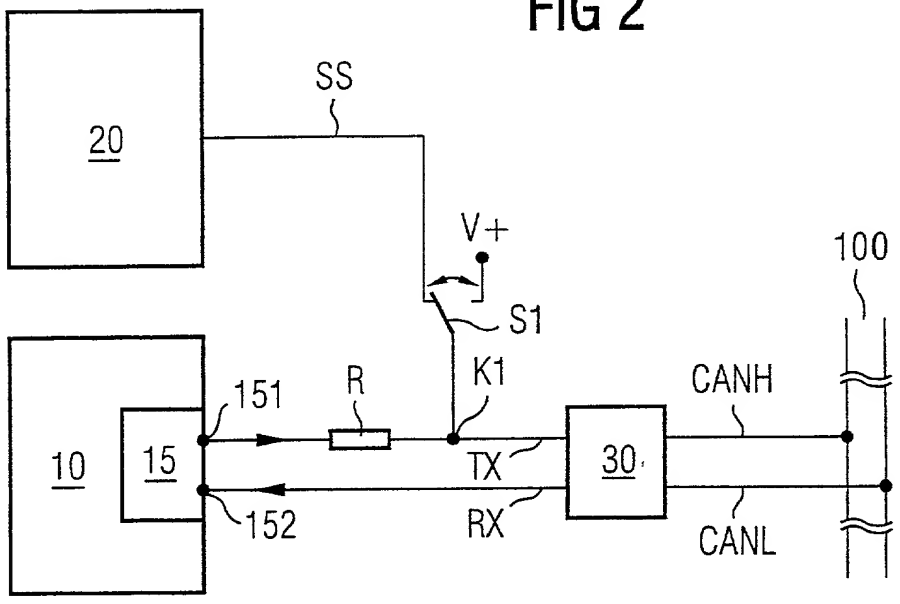

20
SS
V+
S1
100
10
15
151
R
K2
K1
CANH
TX
30
152
RX
CANL
INT
CSM

FIG 2


20
SS
V+
S1
100
10
15
151
R
K1
CANH
TX
30
152
RX
CANL

10191/1389

COMBINED DECLARATION AND
POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below adjacent to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled **METHOD AND DEVICE FOR TESTING THE INHIBIT FUNCTION OF A NETWORK COMPONENT TRANSMISSION INHIBITING DEVICE**, and the specification of which:

[ ] is attached hereto;

[ ] was filed as United States Application Serial No. _____ on _____, 19__ and was amended by the Preliminary Amendment filed on _____, 19__.

[x] was filed as PCT International Application Number PCT/DE99/02158, on the 13th day of July, 1999

[x] an English translation of which is filed herewith.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a). I hereby claim foreign priority benefits under Title 35, United States Code § 119 of any foreign application(s) for patent or inventor's certificate or of any PCT international applications(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America

filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

PRIOR FOREIGN/PCT APPLICATION(S)
AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. § 119

Country : Federal Republic of Germany

Application No. : 198 50 065.3

Date of Filing: 30 October 1998

Priority Claimed
Under 35 U.S.C. § 119 : [x] Yes [ ] No

I hereby claim the benefit under Title 35, United States Code § 120 of any United States Application or PCT International Application designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations § 1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application:

PRIOR U.S. APPLICATIONS OR
PCT INTERNATIONAL APPLICATIONS
DESIGNATING THE U.S. FOR BENEFIT UNDER 35 U.S.C. § 120

U.S. APPLICATIONS

Number :

Filing Date :

PCT APPLICATIONS
DESIGNATING THE U.S.

PCT Number :

PCT Filing Date :

I hereby appoint the following attorney(s) and/or agents to prosecute the above-identified application and transact all business in the Patent and Trademark Office connected therewith.

(List name(s) and registration number(s)):

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

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